

***In vitro* ANTI-BIOFILM PROPRIETIES OF 'Sucupira branca' (*Pterodon emarginatus*) SEEDS**

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ABSTRACT:

Biofilm is characterized by a complex interaction of planktonic bacteria, into a matrix of protein, nucleic acid and polysaccharide, making this association resistant to antibiotic therapy. The ability to form biofilm and to colonize biomaterials are important virulence factors in *Staphylococcus aureus* and *Staphylococcus epidermidis*. Both biofilm formation and drug resistance are serious public problems for patients in intensive care units or with nosocomial infections. Researches that seek new adjuvant molecules for the prevention and/or treatment of pathogenic biofilms have been strongly encouraged. Herein, we investigated the effect of protein extract from *Pterodon emarginatus* seeds, known as 'sucupira branca', under both *in vitro* biofilm formation and detachment of gram-positive pathogenic bacteria. The crude extracted was separated by chromatography using Blue-Sepharose column in AKTA pure system, equilibrated with 0.02 M phosphate buffer pH 7.2. The elution of proteins were made with 1M NaCl. The chromatogram resulted in two non-retained peaks (NRP) and one retained peak (RP). The peaks were quantified by Bradford (0.33 mg.mL⁻¹) and SDS-PAGE indicated the presence of different protein/peptide profiles between NRP and RP. Screening of biological activity revealed *Staphylococcus sp.* anti-biofilm activity for RP at 100µg.mL⁻¹, prompting a reduction 51 % and 95 % on adherence of *S. aureus* (ATCC 80958) and *S. epidermidis* (ATCC 35984) strains, respectively. Furthermore, it was also demonstrated an important detachment of 24 h old biofilms, ranging from 78 % to 90 % on *Staphylococcus* species. The further RP fractionation are under progress to obtaining of the pure molecule, in order to perform it physical-chemical characterization and against a higher number of bacteria species.

Keywords: biofilm, antimicrobial molecule, bioactive vegetal compound, virulence, adhesion

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